SIX SIGNATURE AREAS:

CYBERINFRASTRUCTURE:

The integration, coordination, and deployment of information technology and people to pursue novel scientific theories and knowledge. This area involves computationally intensive science that is carried out in highly distributed network environments or science that uses immense data sets that require grid computing. An example includes Thomas Hacker's work in preparing the infrastructure to support data management of the particle physics collider experiment known as CERN CMS (CERN is the abbreviation for the European Organization for Nuclear Research, and CMS is the abbreviation for compact muon solenoid, a type of electromagnet).

ENERGY AND SUSTAINABILITY:

Involves taking a systematic approach to addressing the sustainable delivery, production, and consumption of energy, using new and current technologies and considering their environmental impacts. One example is Athula Kulatunga's work in the IR-PEDAL lab in electrical engineering technology, which is focused on applied research related to energy-efficient motion controls in electric vehicles and motors, energy-efficient power conversions in alternative energy integration, and smart-grid initiatives.

STEM EDUCATION:

Seeks to address issues of national importance in raising awareness and interest of our nation's youth in STEM disciplines and in preparing a workforce that is capable of advancing society in science, technology, engineering, and math. An example includes Melissa Dark's recent NSF study on problem-solving as an approach to teaching STEM disciplines to rural middle school students. The college also hired Todd Kelley, assistant professor of industrial technology, as part of Purdue's P-12 sTEm education initiative among the colleges of Engineering, Education, and Technology to emphasize technology and engineering.